USER MANUAL

SMART HOME

Group 07

ARSHAD MRM E/17/015

NISHANKER S   E/17/230

VARNRAJ M   E/17/358

Contents

Introduction

Smart-home is a convenient set up where applications or devices can be automatically controlled remotely or sensors from anywhere with an internet connected network device of mobile Application. Smart Home System is an automated management system designed for medium to large scale home users.
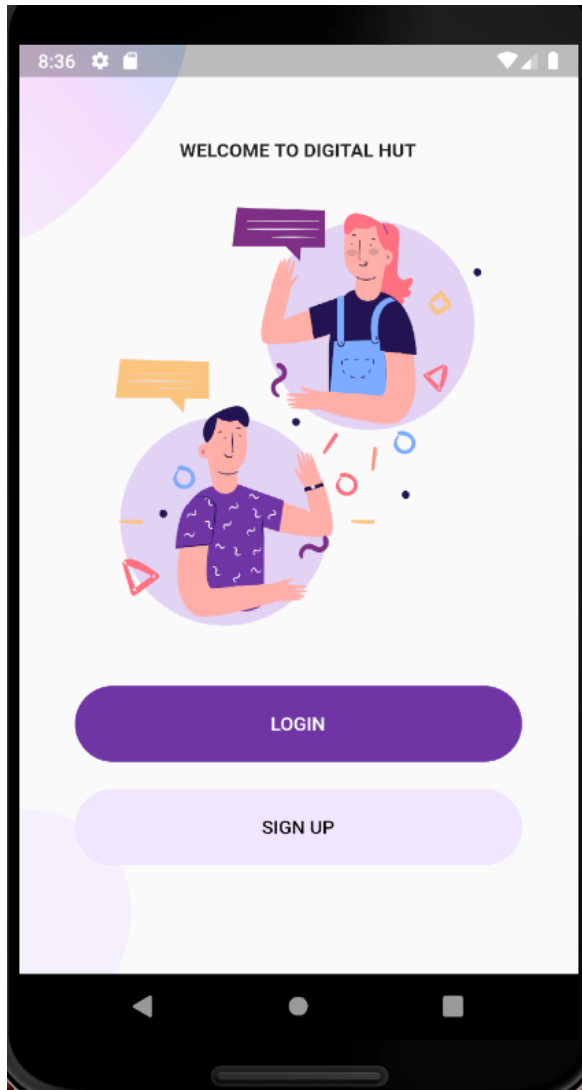
This design is carefully designed to overcome the typical home controlling problems, with a high security feature. This system helps clients to control their home appliances through the mobile application and get real time status of them. So that, it improves efficiency of using appliances and profitability with minimal power consumption by making automation controlling.

The system consists of three main components; a mobile application with all functionalities to control home appliances, a Centralized Device which is a main hardware unit to connect the actual Hardware components, and appliances consisting of RGB light, Smart Light, and Power Socket. User wants to connect appliances with the centralized device, and he can activate the appliances using a mobile application, and can monitor their home 24x7 status.

Mobile Application

The following guidelines are intended for the customers who will use the mobile application.
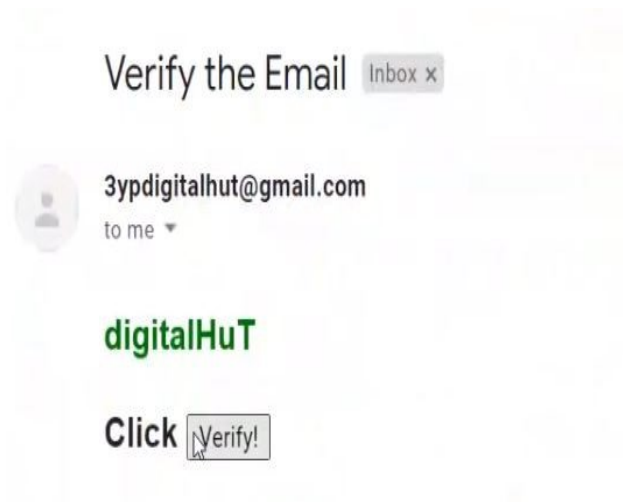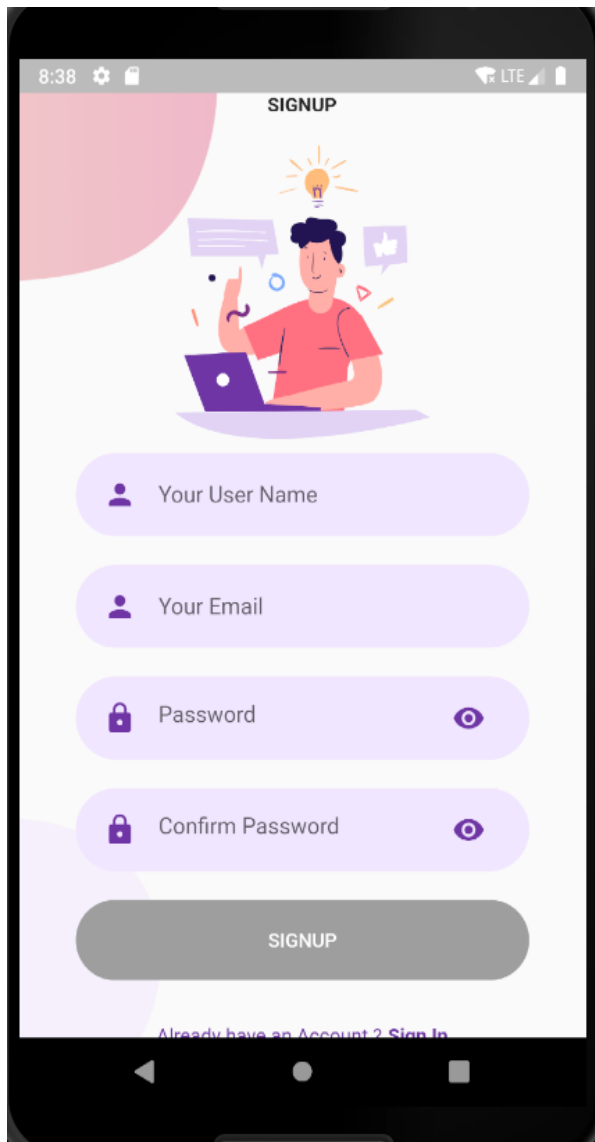
Welcome Screen

For user access for this application, user should want to sign up the application. It is compulsory to invite a person to their home to control their room.

This page is starting page of the application, and user can sign up, if he is a new user.

If user has already signed up to this application, then he can click to 'LOGIN' and he can log in to the application.
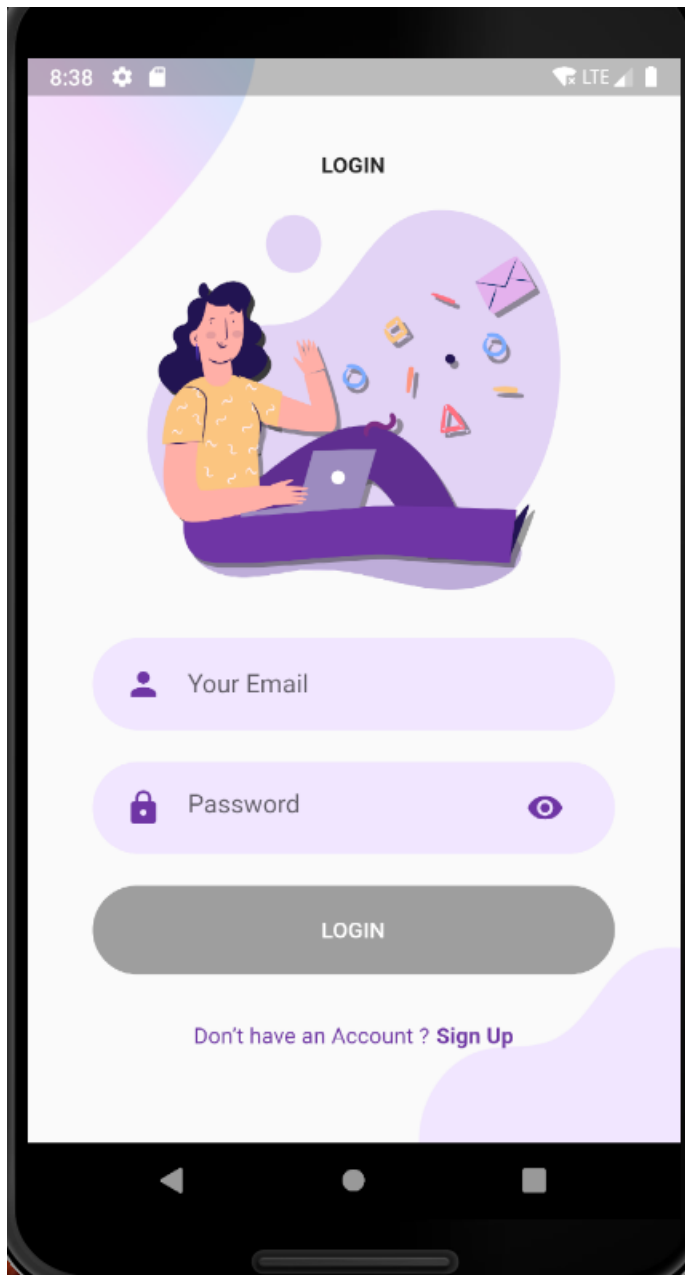
Sign Up Screen

This page shows, How to Sign Up to the System.

A new user wants to sign up to the mobile application by giving their User Name, Email, Password, and confirmed password. For the security, password must be at least 8 characters long. If all required systems are filled correctly, then "signup" button will change in to purple color. Then only, user can request to sign up. If not, toasting will appear that, to fill the required fields correctly.
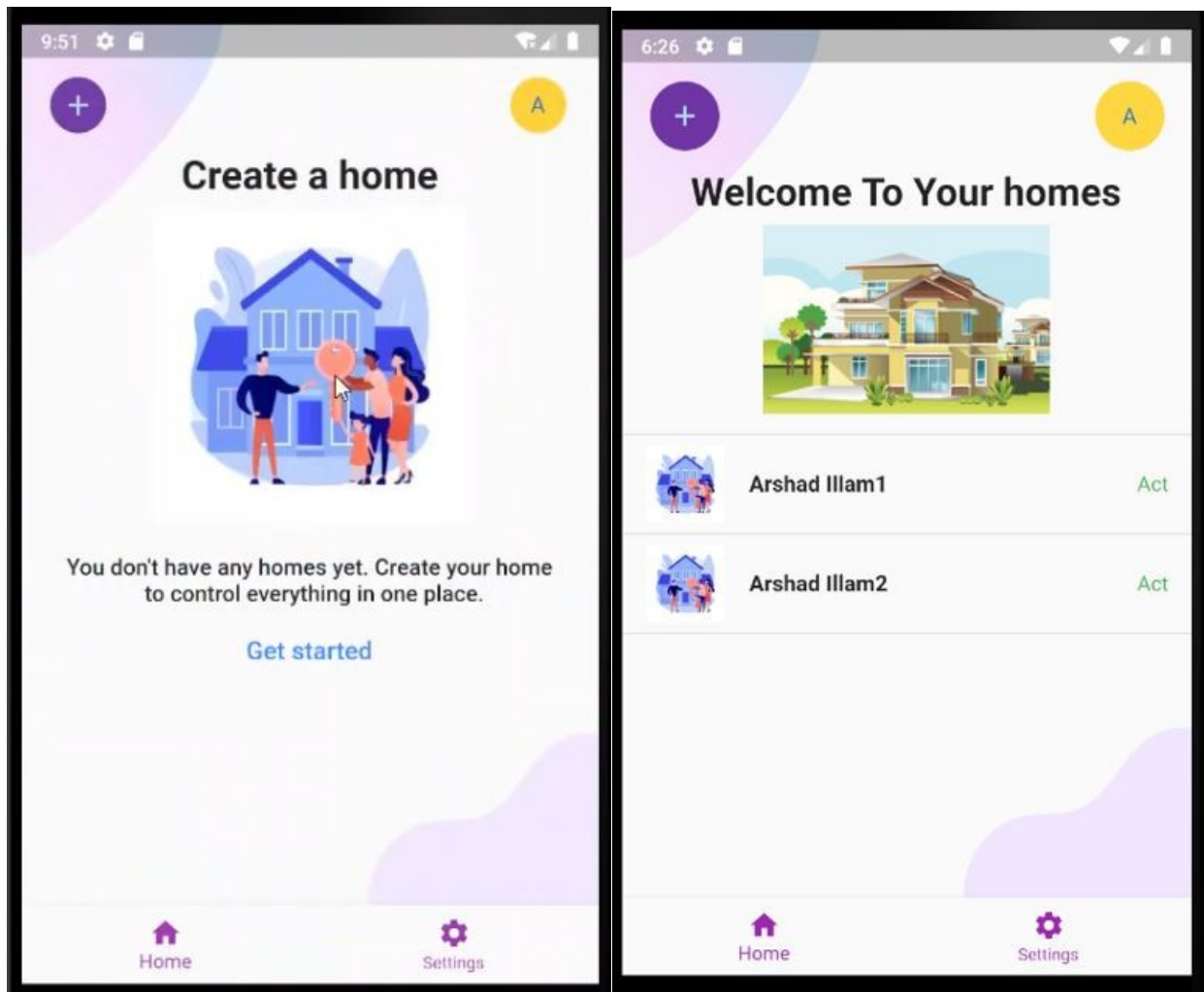
To register the user, signup a verification email will sent to relevant email. By clicking this, your email will be verified and the 2-step verification will do using this.

Login Screen

After verify the email, Registered User can Log In by using "LOG IN" screen. User can use their username or email to log in to the system by giving correct password and username or email. So that, user can go in to the all homes visual page.

All Homes Visual Page

After successfully Login to the system, you will redirect to your all homes visual page. In here, if you are a new user, or you don't join any homes by this account, you will see the left side screen page. By clicking "Get Started" or left side top corner "+" icon, you can create a new home.

After successfully added a new home, you will be redirected to right side screen. It shows that, your created homes in the page. One user can manage many homes as well.
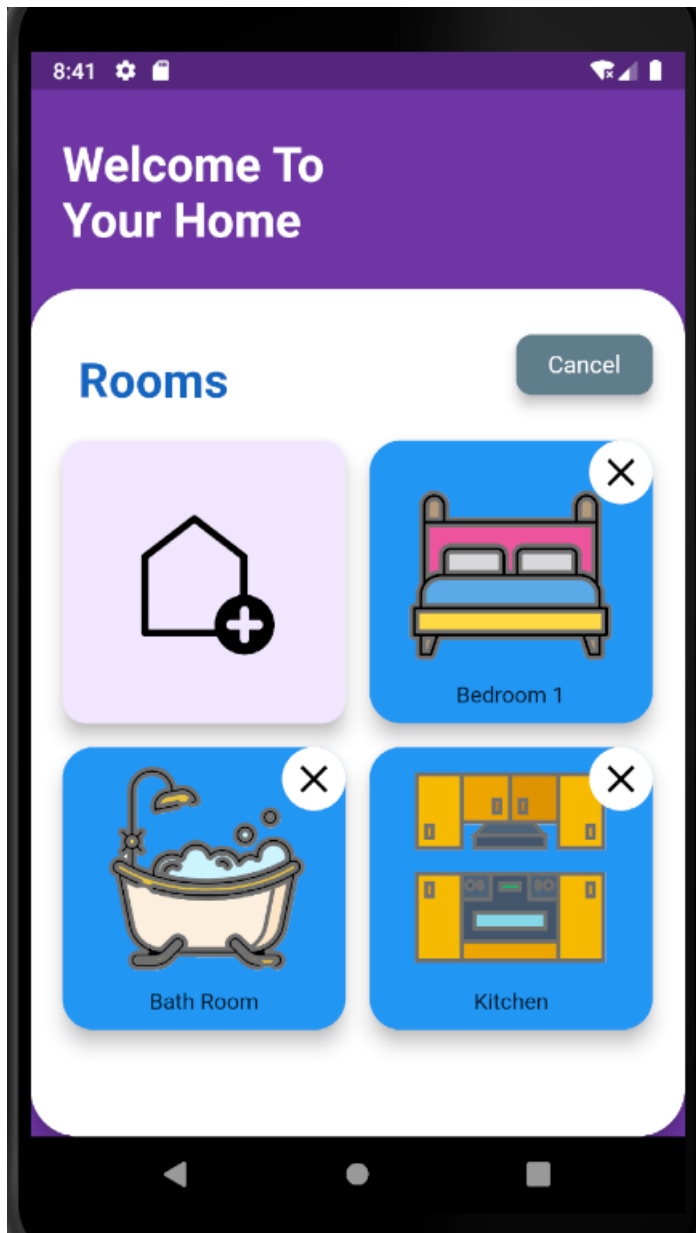
Home Page

This is the home page of a created home.

A user can create their rooms to easiness of identify their rooms, by giving names for their rooms, and by giving picture as well.

So that, they can manage and control home appliances easily.

By clicking "Add C Dev" button, you can add centralized device. You can see, how to add Centralized device in below (Add Central Device Page).
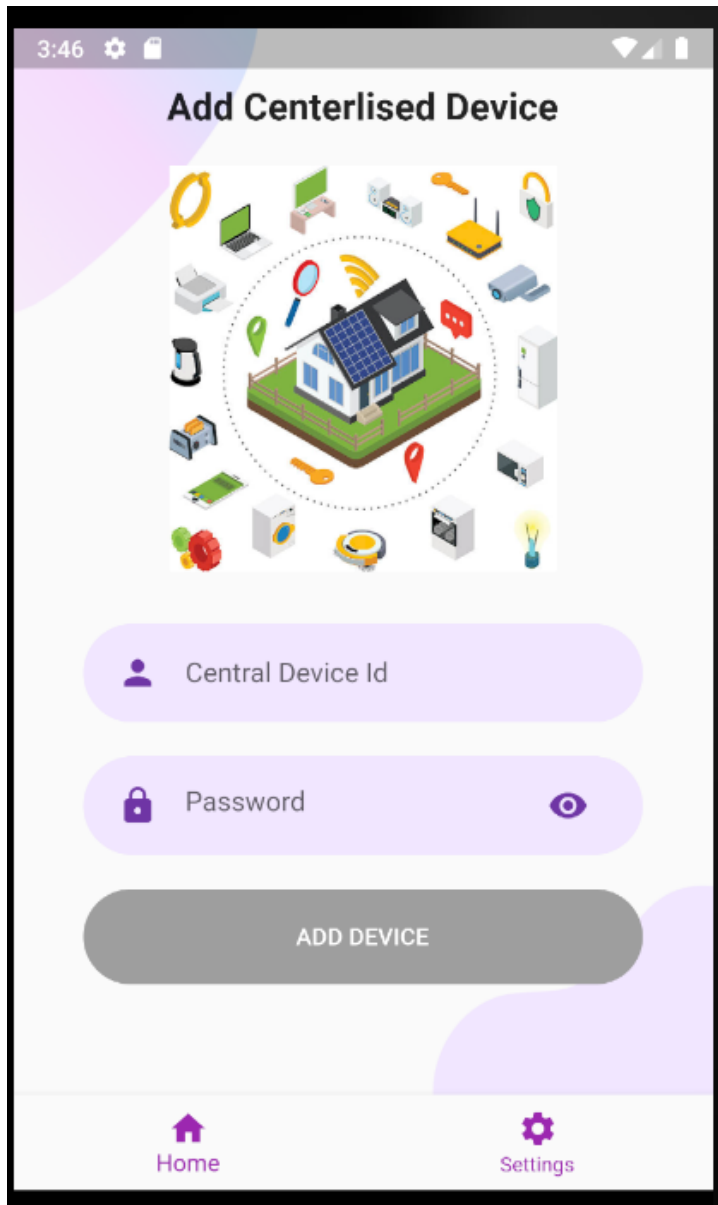
Delete a menu

If you want to delete a menu you created like rooms, or device or home, you want to long press that item. Then you will get appear like this "x" logo. By clicking this, you will get, an alert confirms to delete the menu to confirm the delete. By confirming, user can delete their menu.

Remember: This option will remove your device all confirmation and controls. If you want to add that menu again, you want create all procedure of create that menu as given above.

This option is used, if a user wants to rearrange home appliances, or to delete accidently created menu.
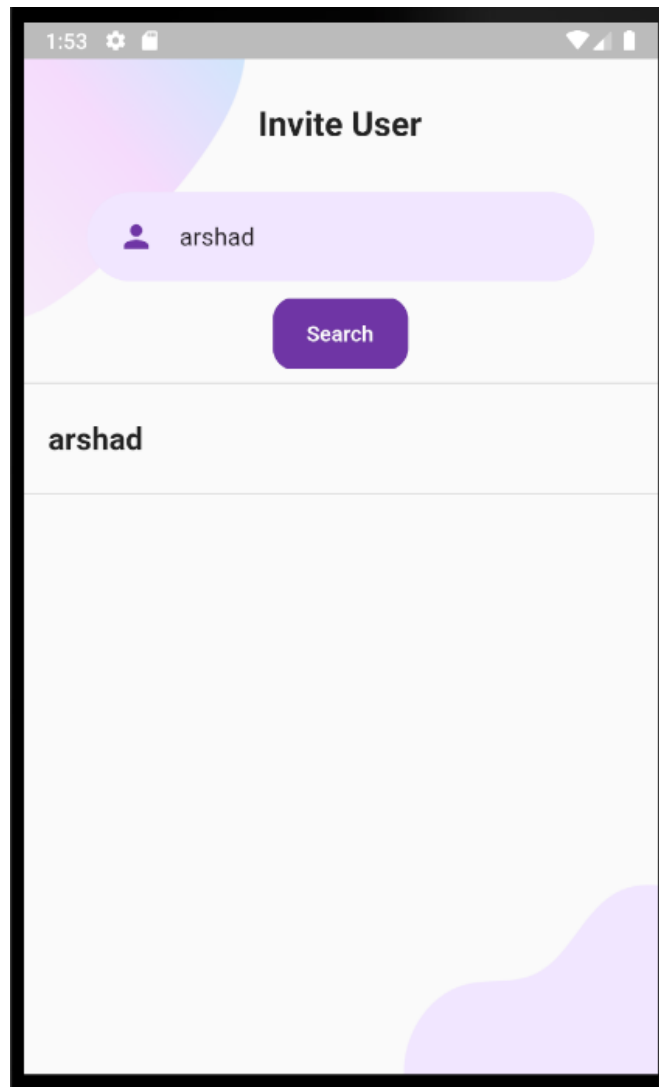
Add Central Device

To create devices in the home, you must want to add at least one centralized device. To add a centralized device, you should click "Add C Dev" button which is shown in 'Home page' above.
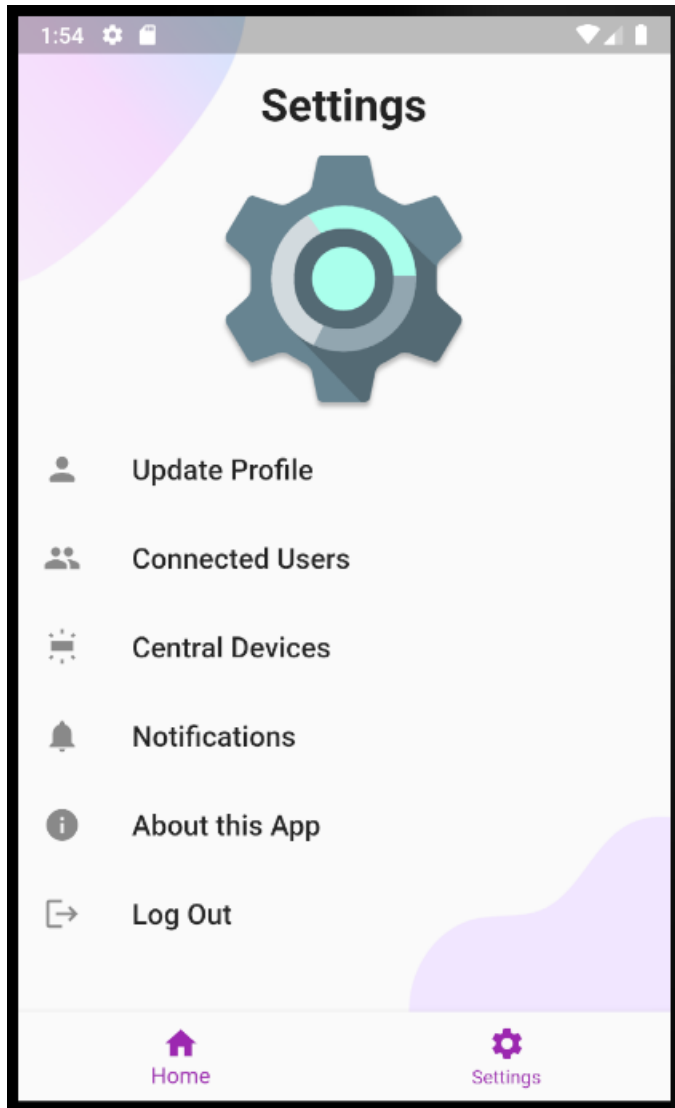
By clicking this, will render this page. By entering Central Device ID and Password, we can add centralized device to the home.

The person who created the home will be made as Admin user to that home. So, admin user can invite their home members to that home by using Invite User. To achieve this, admin wants to search their user's name in '**Invite User'** field. So that it will appear in related to that user name. So, user can send invitation. To search this user, searched person wanted to register to this application. So only that, he can be invited.
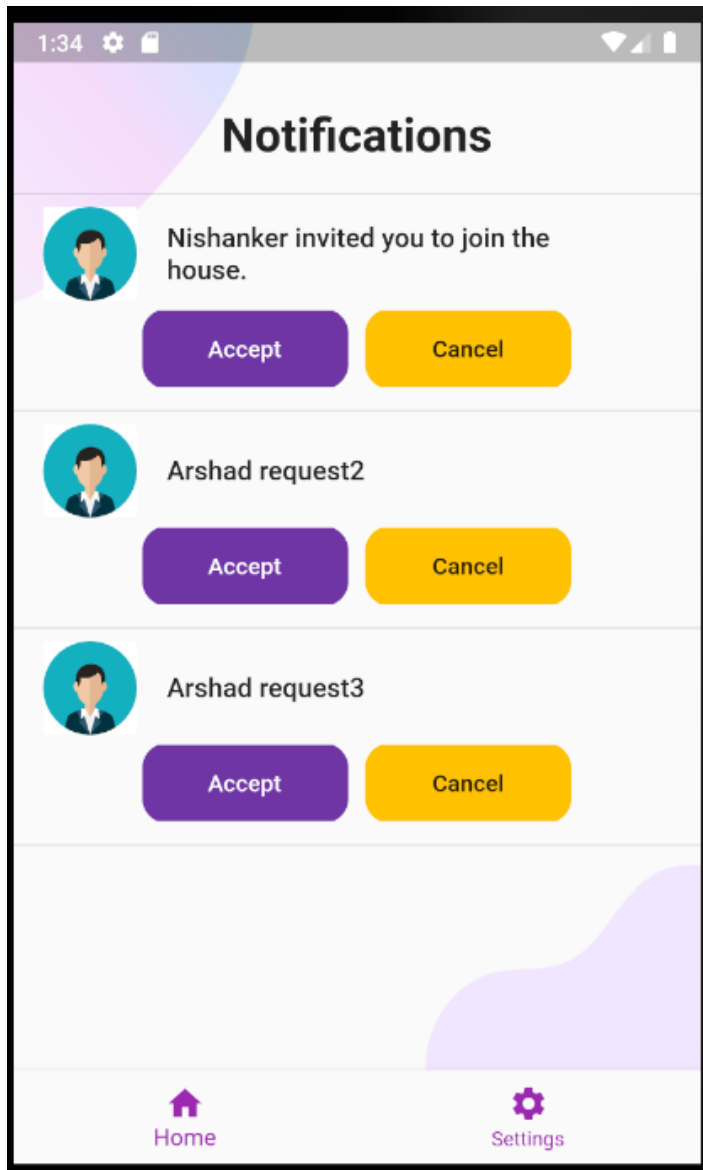
Settings

This is the Settings page of our application.

In here we can change settings and, can see Connected Users in the home, connected Central Devices, Notifications, and all the necessary things.
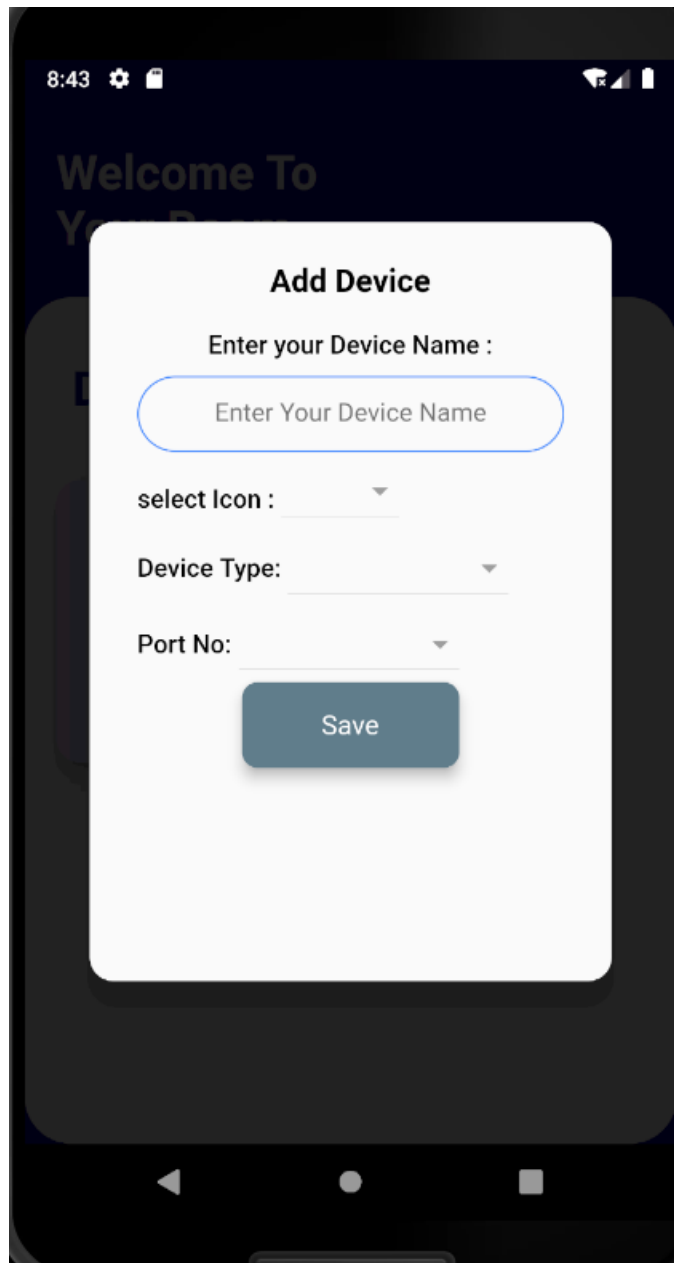
Notifications

When user invite another user, he will be notified in the notifications. So that, he can accept or decline the invitation.

Appliances

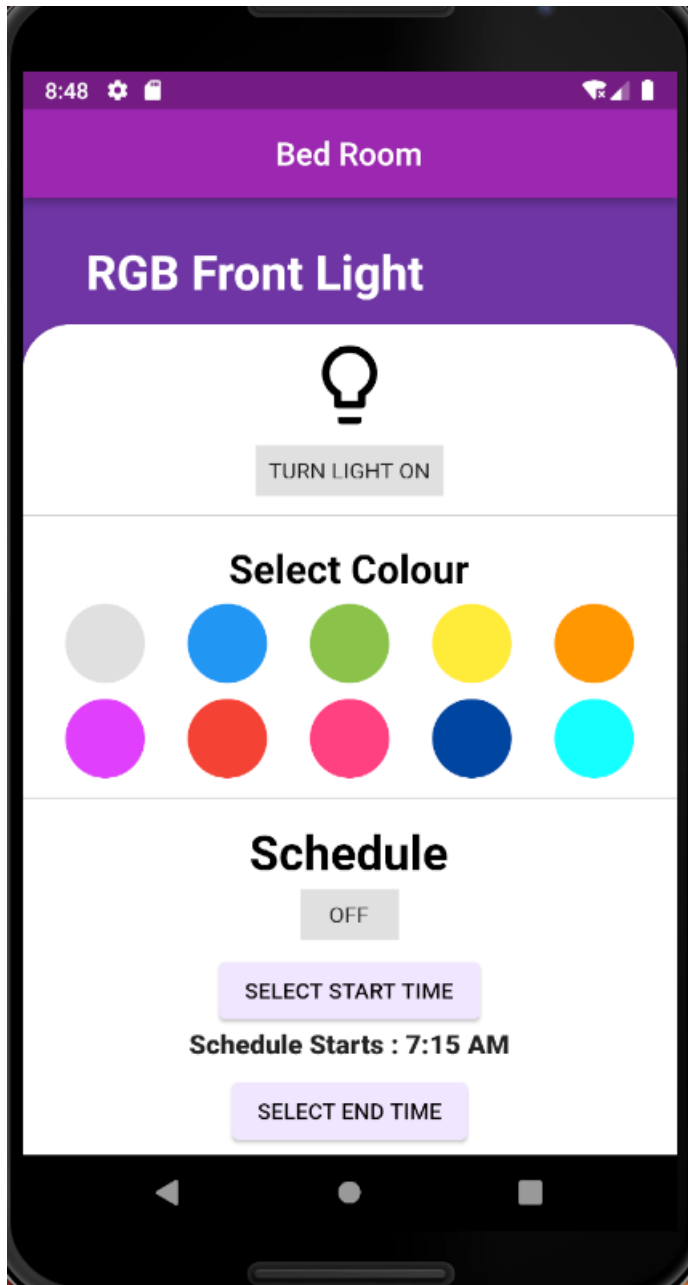We can add inbuilt home appliances, that we are allowed to control by using this application.

There are 3 types of appliances, and it can be add using "**Add Device**".
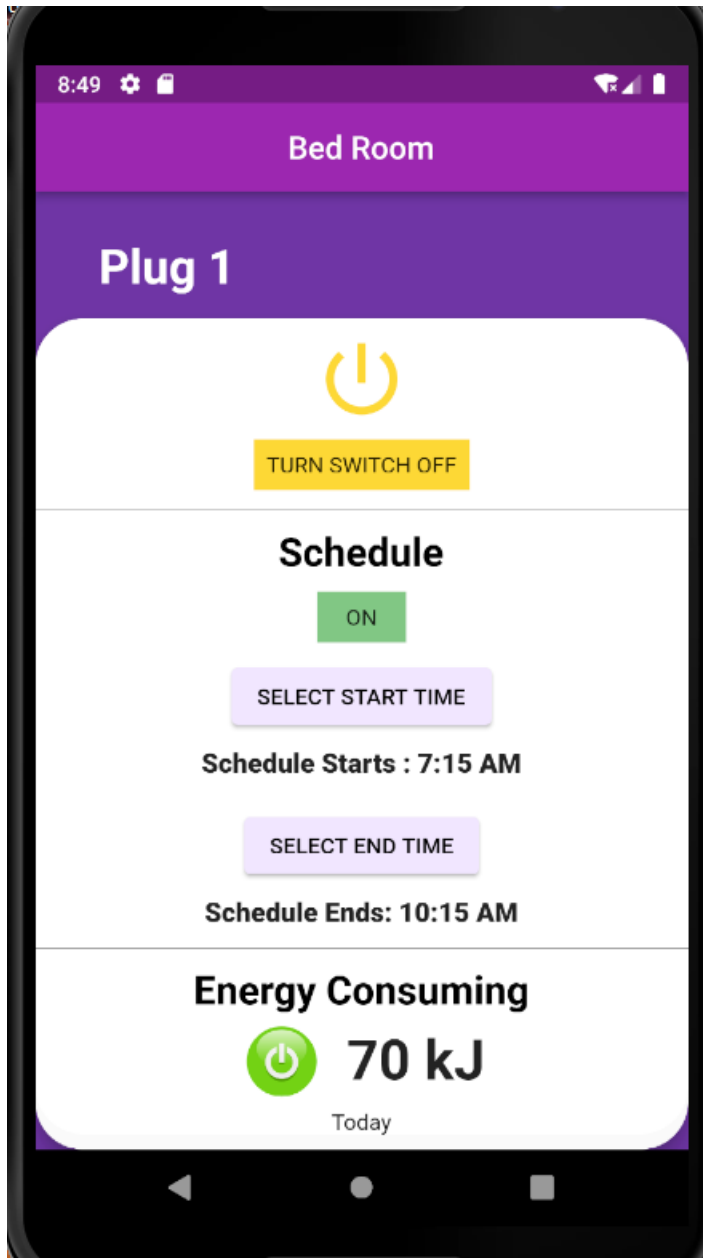
Add Device

This is showed how to add a device. User want to add Device name, type, icon, and Port No. By using this, a device can be added. So that, device should want to connect in related port in physically.
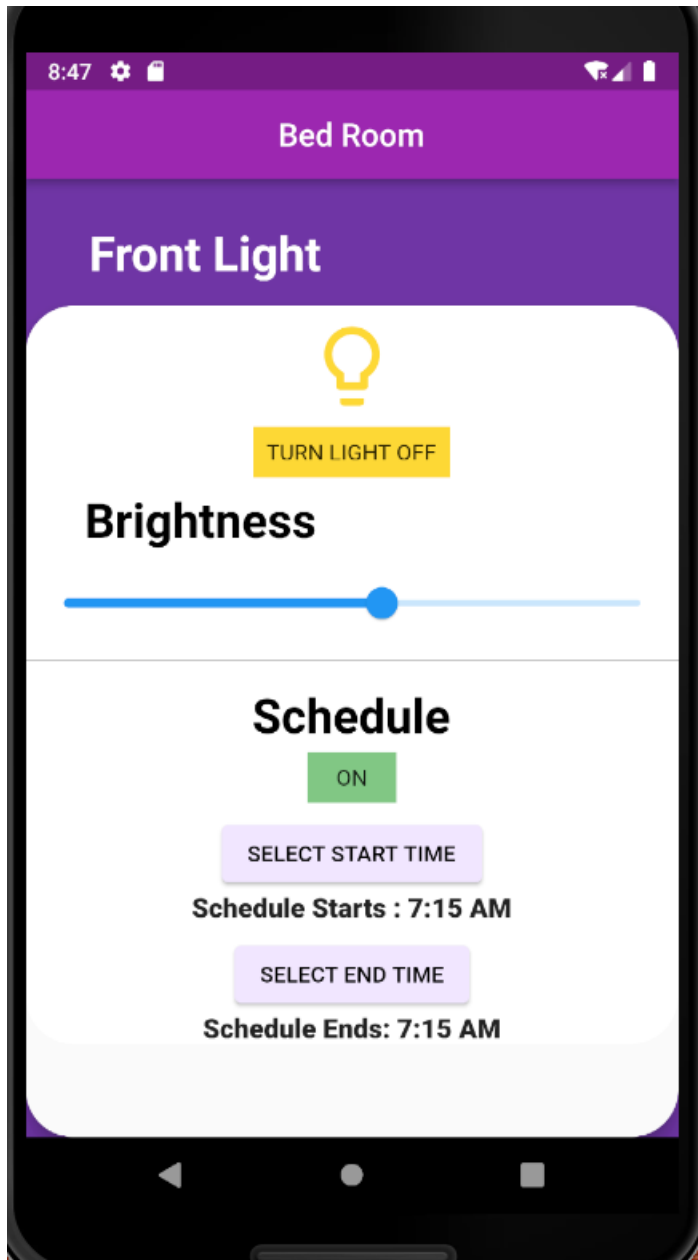
RGB Light

This is one type of given home appliance. User can control RGB light, and colors, and can be scheduled also.

Smart Plug

This is Smart plug appliance, and user can control and see real time energy consumptions of the day, and scheduled them also.

Smart Light

This is smart light, and can control, and change the brightness, and schedule them.

Hardware Node

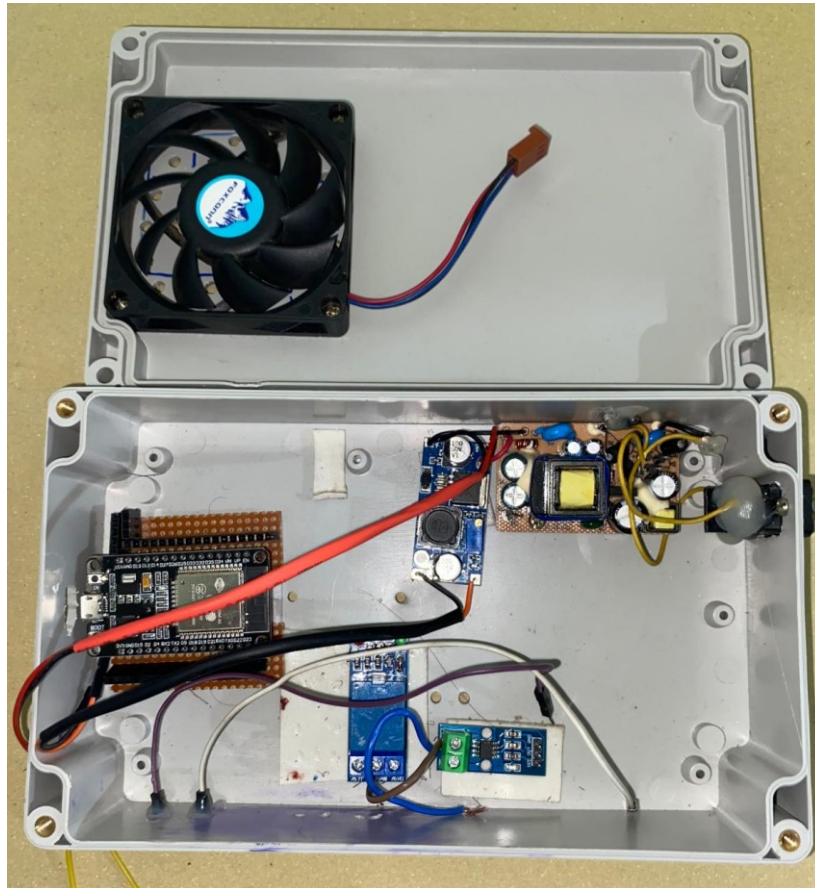Each Hardware node has mainly 2 parts.

1. Centralized Device
2. Home Appliances (RGB Light, Smart Light, Smart Power Socket)

Centralized Device

Centralized Device is looks like a small box consists of ESP32 Arduino, and other necessary sensor modules. Each Centralized box consists of unique Centralized device ID, and the password to activate this. It has a cooling fan to reduce heat from inside.

Inside Look of the Centralized Device

Giving power to Centralized Device.

Centralized device wanted to give power, using 220V plug adapter.

RGB Light, Smart Light, Power Socket

We have implemented 3 home appliances which are RGB Light, Smart Light, and Smart Power Sockets.

RGB panel light will be connected in to main power supply using 5v converted power supply, and it's data pin will connected to Centralized Device's related port given.

Smart Light will connect directly to main power supply. When connecting it to power supply, one relational wire (Earth/Ground) will be connected it in the middle to Centralized Device to control the Smart Light.

Like the smart bulb, Smart power socket will connect directly to main power supply. When connecting it to power supply, one relational wire (Earth/Ground) will be connected it in the middle to Centralized Device to control the power socket and to measure the energy.